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Metal Industry Indicators

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

February 2001

Despite a modest increase in January, the growth rate of the primary metals leading index still points to declining growth in overall metal industry activity in the coming months. The metals price leading index and nonferrous metal products inventories continue to signal weak growth in most metal prices over the near term.

The **primary metals leading index** advanced 0.2% in January, edging up to 121.5 from a revised 121.3 in December. The index's 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, moved up to -6.7% from a revised -8.0% in December. Normally, a growth rate below -1.0% signals a downward near-term trend for future growth in metals activity, while a growth rate above +1.0% signals an upward trend.

Only four of the leading index's eight components were available in time for its calculation, so the January leading index should be considered preliminary. Three components moved up in January, with the strongest increase coming from the length of the average workweek in primary metals establishments. However, that component recovered less than a third of its big drop in December. The JOC-ECRI metals price index growth rate and the S&P stock price index for diversified machinery companies registered relatively modest gains. But, the second consecutive large monthly decrease in the Purchasing Managers' Index offset most of the gains in the other components. This component is now at its lowest level since March 1991. The growth rate of the primary metals leading index points to further declines in domestic primary metals activity in the coming months.

In December, the latest month for which it is available, the **primary metals coincident index** plunged 3.2%, its largest 1-month drop since October 1982. The steel, primary aluminum, and copper coincident indexes also experienced unusually large declines in December, reflecting in part, severe weather, shortages and high prices for energy, and a strike in the copper industry.

The **steel leading index** fell 1.1% in December, down to 103.7 from a revised 104.9 in November. The index's 6-month smoothed growth rate dropped to -9.6% from a revised -8.7% in November, its lowest growth rate since February 1991. The largest negative contributions to the net decrease in the leading index came from the length of the average workweek in steel mills and the Purchasing Managers' Index. The steel leading index continues to signal further declines in near-term U.S. steel industry activity.

The **aluminum mill products leading index** climbed 0.4% in December, moving up to 158.7 from a revised 158.1 in November. Meanwhile, the index's 6-month smoothed growth rate crept back into positive territory, up to 0.1% from a revised -0.5% in November. Only three of the index's seven components, commercial and industrial construction contracts; the length of the average workweek in aluminum, sheet, plate, and foil establishments; and the growth rate of the inflation-adjusted U.S. M2 money supply, rose in December. However, those increases were large enough overall to push the leading index higher. With its growth rate generally between +1.0% and -1.0% in recent months, the aluminum mill products leading index seems to be signaling flat-to-slow growth in aluminum mill products activity in the coming months.

The **primary aluminum leading index** fell 1.2% in December to 85.0 from a revised 86.0 in November, and the index's 6-month smoothed growth rate slid to -8.8% from a revised -7.7% in November. A 2.7-hour drop in the length of the average workweek in primary aluminum establishments, the second largest drop in the 37-year period for which data are available, was by far the largest negative factor in the net decrease in the leading index. In fact, without the large drop in the workweek component, the leading index would have increased about 0.8% in December. The primary aluminum leading index is forecasting further declines in domestic primary aluminum activity in the months ahead. (Tables and charts for the primary aluminum indexes are in a separate file.)

The **copper leading index** increased 0.5% in December to 125.1 from 124.5 in November, the second month in a row that it has moved higher. The index's 6-month smoothed growth rate rose to -3.9% from a revised -5.3% in November. However,

only two of the index's seven components increased in December. Most of the strength in the leading index came from a huge increase in the S&P stock price index for building materials companies, its third largest 1-month increase in the past 50 years. Without the increase in the stock price component, the index would have fallen about 0.8%. Despite increases in the past 2 months, copper leading index continues to signal a decline in domestic copper industry activity in the coming months.

No Change in Latest Metals Price Leading Index

In December, the latest month for which it is available, the **metals price leading index** was unchanged from November's revised 102.8. However, the index's 6-month smoothed growth rate moved up a bit to -5.4% from a revised -6.2% in November. Three of the index's four components were available for the December index calculation. The growth rate of the index measuring the trade-weighted average exchange value of other major currencies against the U.S. dollar posted a strong gain, but the other two available components, the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metals and the spread between the U.S. 10-year Treasury Note and the federal funds rate, both moved down. The fourth index component, the growth rate of the Economic Cycle Research Institute's 16-Country Long Leading Index, was available only through November, when it moved down for the third consecutive month.

The 6-month smoothed growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories retreated from its large gain in November, as it moved down in December to 2.0% from a revised 4.3%. This indicator tends to move inversely with metal price growth, and has generally been moving up since October 1999.

The growth rate of the metals price leading index continues to signal little or no growth in most metal prices in the near term. The increases in U.S. nonferrous metal products inventories over the past year support that forecast. The business cycle and inventories are only two factors in metals price determination. Other factors that affect prices include changes in metals production, speculation, foreign exchange rates, strategic stockpiling, political instability, and production costs.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

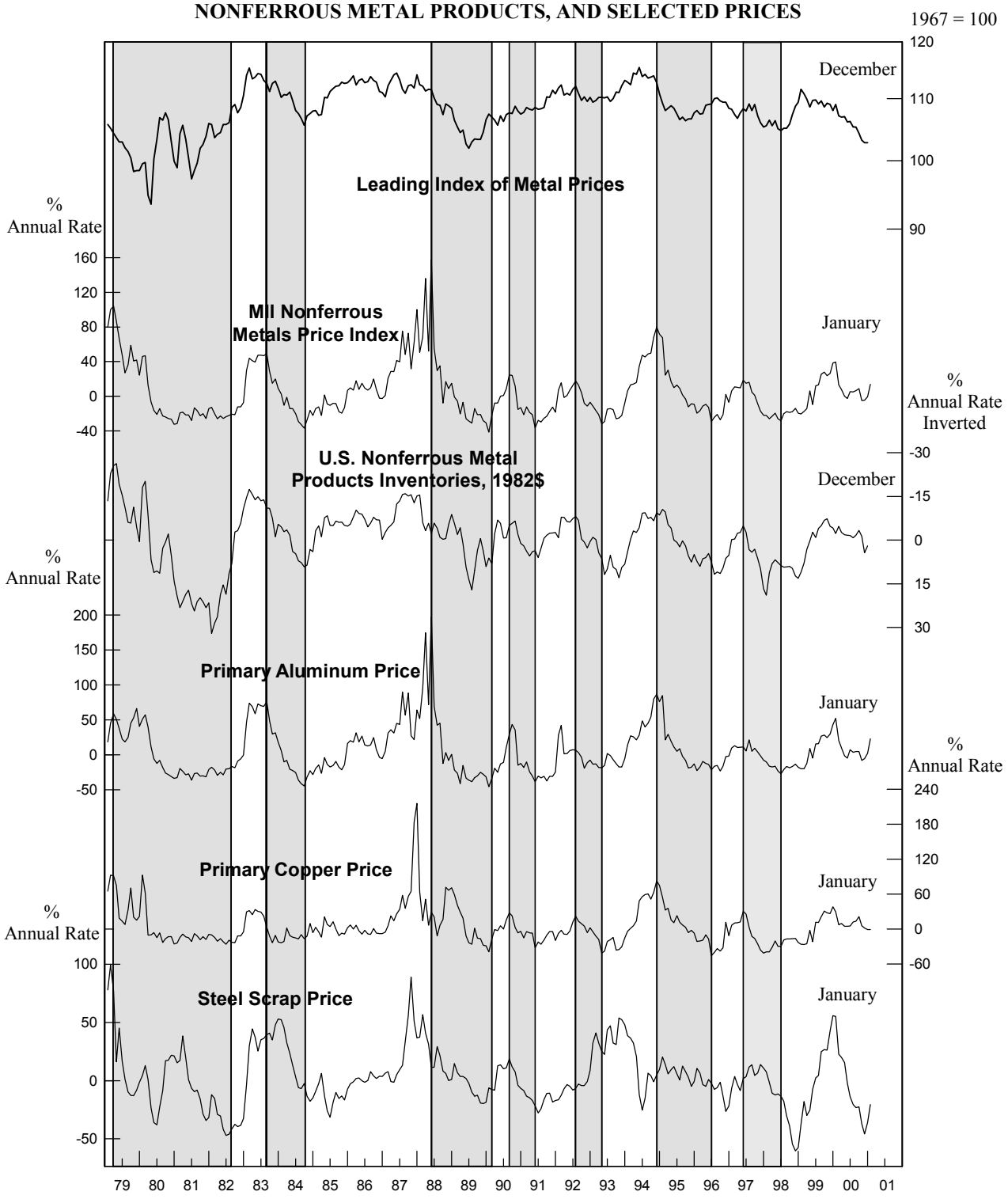
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
1999						
December	108.0r	38.4r	-4.2	42.7	38.3	55.8
2000						
January	109.0r	39.7r	-2.3	52.1	29.7	55.2
February	107.1r	13.4r	-4.7	20.6	7.6	22.7
March	106.9	7.6r	-2.6	9.6	9.8	19.8
April	107.0r	0.2r	-1.8	-1.7	4.9	15.7
May	106.1	-2.4r	-1.7	-4.9	4.9	-1.9
June	106.2r	5.4r	-1.6	6.9	5.2	-13.7
July	105.3r	5.1r	-0.8	3.3	12.4	-20.5
August	105.3	6.6r	-1.7	4.4	13.9	-23.2
September	104.3r	8.9r	-3.3	4.5	21.7	-22.4
October	103.2r	-4.9r	-1.3	-8.4	5.7	-37.0
November	102.8r	-4.7r	4.3r	-5.7	1.8	-45.6
December	102.8	-0.5r	2.0	2.1	-0.7	-35.9
2001						
January	NA	13.7	NA	22.7	-0.8	-20.4

NA: Not available *r: Revised*

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metals, the Economic Cycle Research Institute's 16-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, February 2001

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
February	128.3r	-1.6r	115.6	2.8
March	127.8	-2.6r	116.4	3.4
April	129.1r	-0.8r	116.8	3.6
May	127.5	-3.3	115.9	1.5
June	126.2	-4.8	116.3	1.6
July	125.4	-5.5	116.2	1.1
August	125.0r	-5.6r	115.2	-0.7
September	125.7r	-4.0r	114.9	-1.2
October	123.4r	-6.7r	114.0r	-2.6r
November	123.1r	-6.4r	113.7r	-3.1r
December	121.3r	-8.0r	110.1	-8.6
2001				
January	121.5	-6.7	NA	NA

NA: Not available ***r:*** *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**December**	**January**
1. Average weekly hours, primary metals (SIC 33)	-1.3r	0.7
2. S&P stock price index, machinery, diversified	0.6r	0.1
3. Ratio of price to unit labor cost (SIC 33)	-0.3	NA
4. JOC-ECRI metals price index growth rate	0.2r	0.3
5. New orders, primary metals, (SIC 33) 1982$	-0.3	NA
6. Index of new private housing units authorized by permit	-0.3	NA
7. Growth rate of U.S. M2 money supply, 1996$	0.5	NA
8. Purchasing Managers' Index	-0.5r	-1.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-1.4r	0.1

Coincident Index	**November**	**December**
1. Industrial production index, primary metals (SIC 33)	-0.1r	-1.1
2. Total employee hours, primary metals (SIC 33)	-0.3r	-1.5
3. Value of shipments, primary metals, (SIC 33) 1982$	-0.1r	-0.8
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.4	-3.3

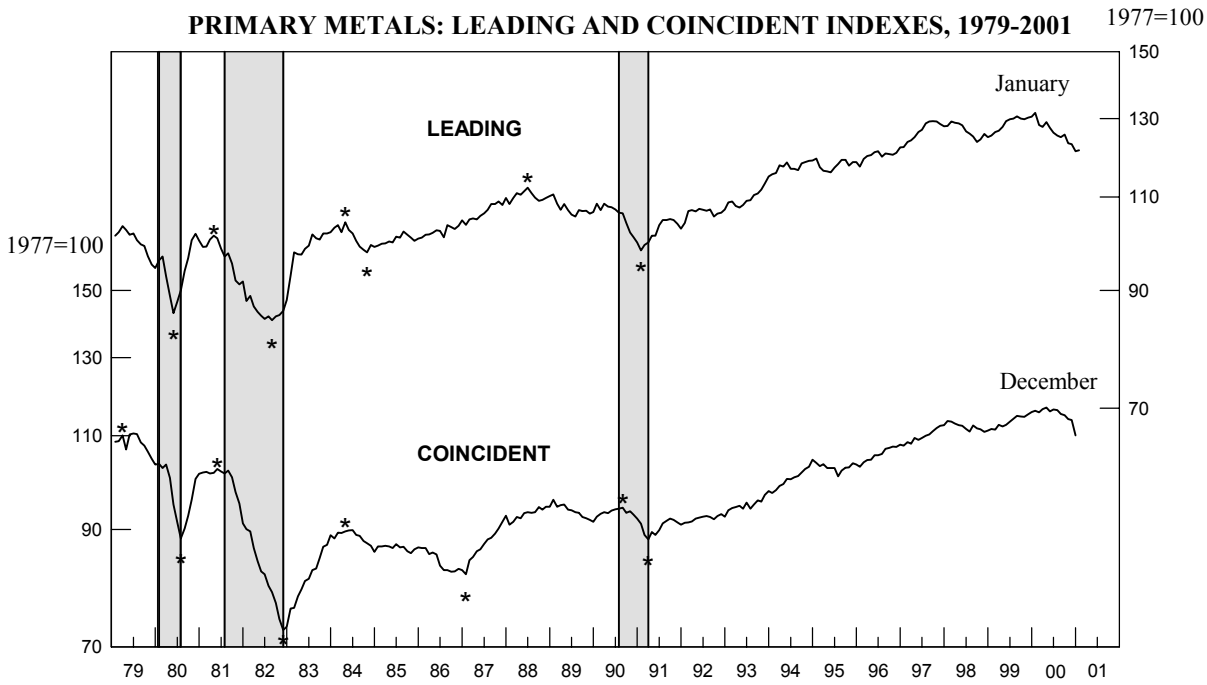
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available ***r:*** *Revised*

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

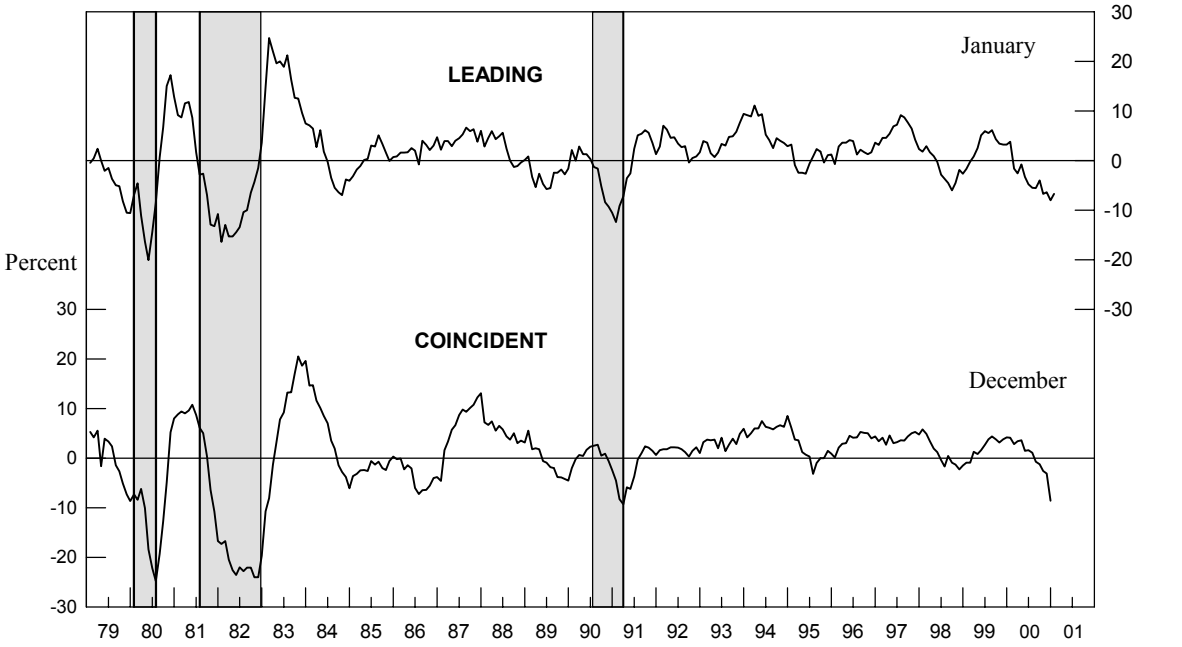
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1979-2001



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1979-2001



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2001

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
January	114.4	3.2	103.4	4.7
February	112.1	-1.2r	103.4	4.0
March	111.5r	-2.1r	104.0	4.2
April	111.0r	-3.0r	103.4	2.3
May	110.1	-4.3	103.2	1.5
June	108.8	-6.0r	103.5	1.5
July	107.2	-8.0	103.1	0.3
August	107.4	-7.0	102.5	-1.1
September	107.7	-5.7	102.3	-1.5
October	105.3	-9.0r	101.1r	-3.6r
November	104.9r	-8.7r	100.5r	-4.5r
December	103.7	-9.6	97.3	-9.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

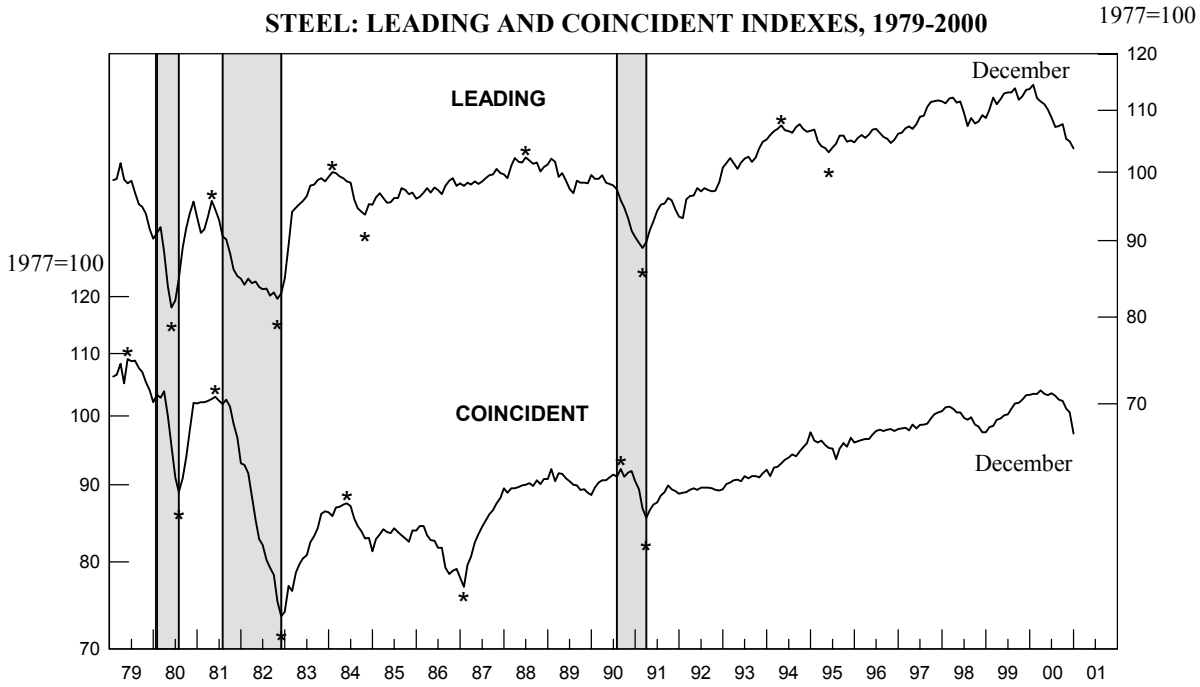
Leading Index	**November**	**December**
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	-0.1	-0.7
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982$, (SIC 331)	-0.1	-0.2
3. Shipments of household appliances, 1982$	0.1	0.0
4. S&P stock price index, steel companies	0.3	0.1
5. Industrial production index for automotive products	-0.2r	-0.2
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	-0.2	0.1
7. Index of new private housing units authorized by permit	0.2	-0.3
8. Growth rate of U.S. M2 money supply, 1996$	-0.3	0.4
9. Purchasing Managers' Index	-0.1	-0.5
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.4r	-1.3
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	-0.3r	-1.4
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982$	-0.4r	-1.1
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	-0.1	-0.9
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.7r	-3.3

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.

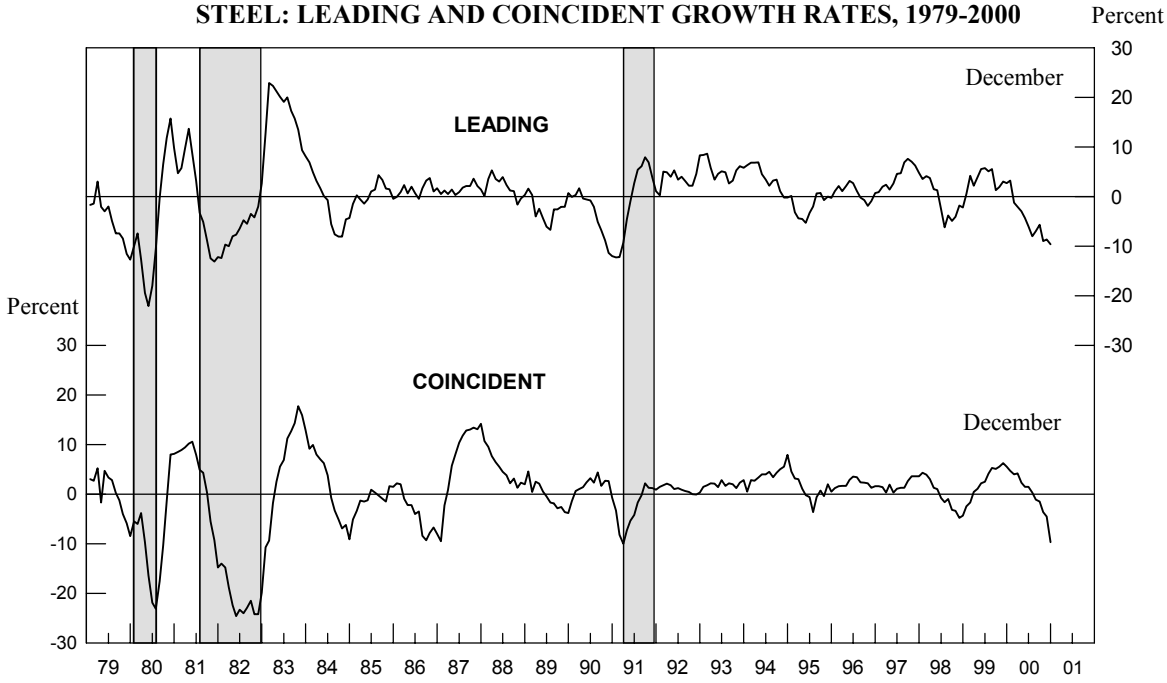
STEEL: LEADING AND COINCIDENT INDEXES, 1979-2000



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.

STEEL: LEADING AND COINCIDENT GROWTH RATES, 1979-2000



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2001

Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
January	159.8	2.6	143.2	2.1
February	159.2r	1.5r	143.0	1.5
March	159.7r	1.6r	143.0	0.9
April	160.8	2.6	144.7	2.8
May	158.4	-0.5r	144.2	1.7
June	158.1	-0.9r	142.5	-0.8
July	154.6r	-4.8r	144.0	1.2
August	158.4	0.1	142.4	-1.1
September	160.7	2.9	141.2	-2.3
October	157.9	-0.6	140.5r	-3.0r
November	158.1r	-0.5r	141.9	-1.1
December	158.7	0.1	141.9	-1.2

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

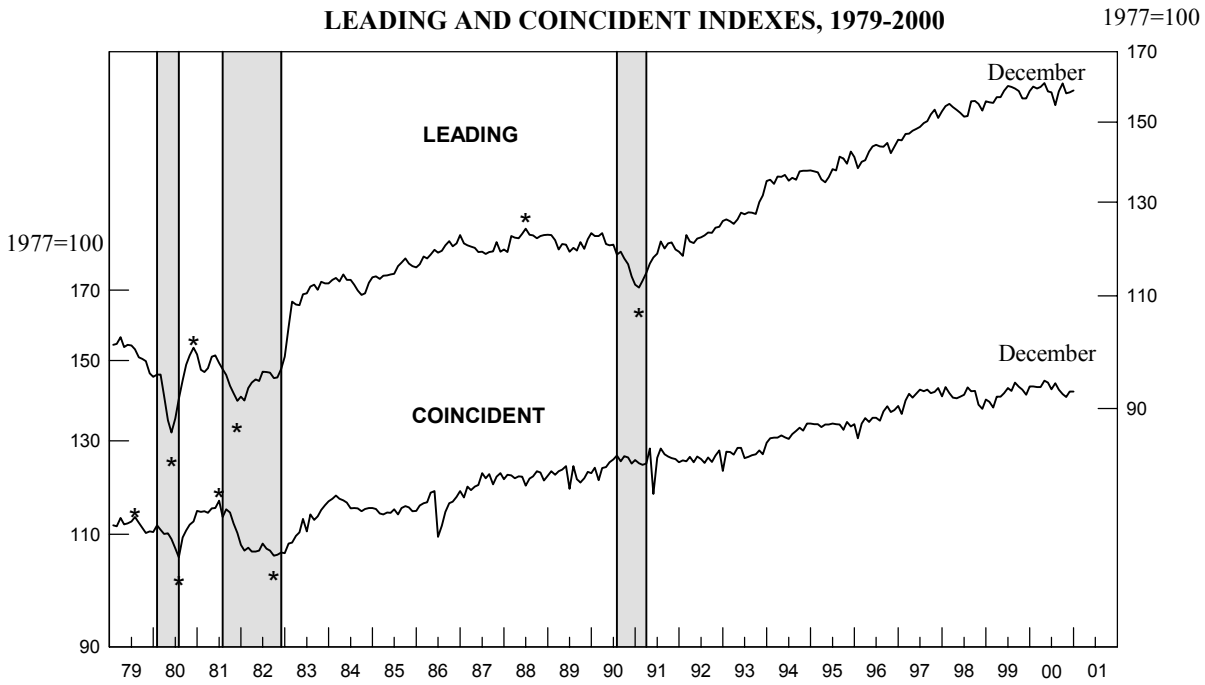
Table 7.
The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**November**	**December**
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	0.5	0.6
2. Index of new private housing units authorized by permit	0.2	-0.4
3. Industrial production index for automotive products	-0.2r	-0.3
4. Construction contracts, commercial and industrial (square feet)	-0.3	0.7
5. Net new orders for aluminum mill products (pounds)	0.2r	-0.3
6. Growth rate of U.S. M2 money supply, 1996$	-0.3	0.5
7. Purchasing Managers' Index	-0.1	-0.6
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.1r	0.3
Coincident Index		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	0.6r	-0.5
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	0.1	0.3
Trend adjustment	0.2	0.2
Percent change (except for rounding differences)	0.9r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted.

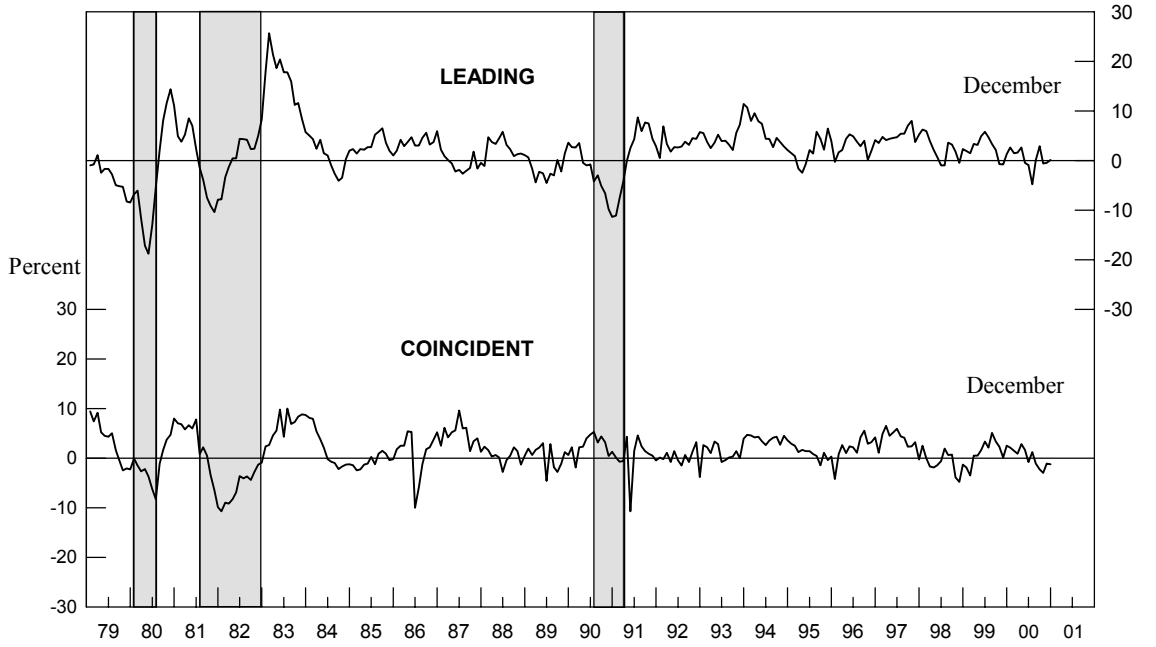
r: Revised

CHART 6.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1979-2000



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1979-2000



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2001

Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2000				
January	131.2	0.1	120.8	-5.3
February	128.1	-4.2	122.6	-2.1
March	128.2	-3.9	122.8	-1.3
April	129.2	-2.5	120.9	-3.6
May	129.1	-2.5	123.3	0.7
June	128.0	-3.9	122.8	0.1
July	127.1	-4.5	121.6	-1.5
August	127.0	-4.0	121.2	-1.6
September	127.2	-3.1	121.6r	-0.7r
October	123.7	-7.3	121.2r	-1.1r
November	124.5	-5.3r	122.2r	0.5r
December	125.1	-3.9	116.1	-8.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

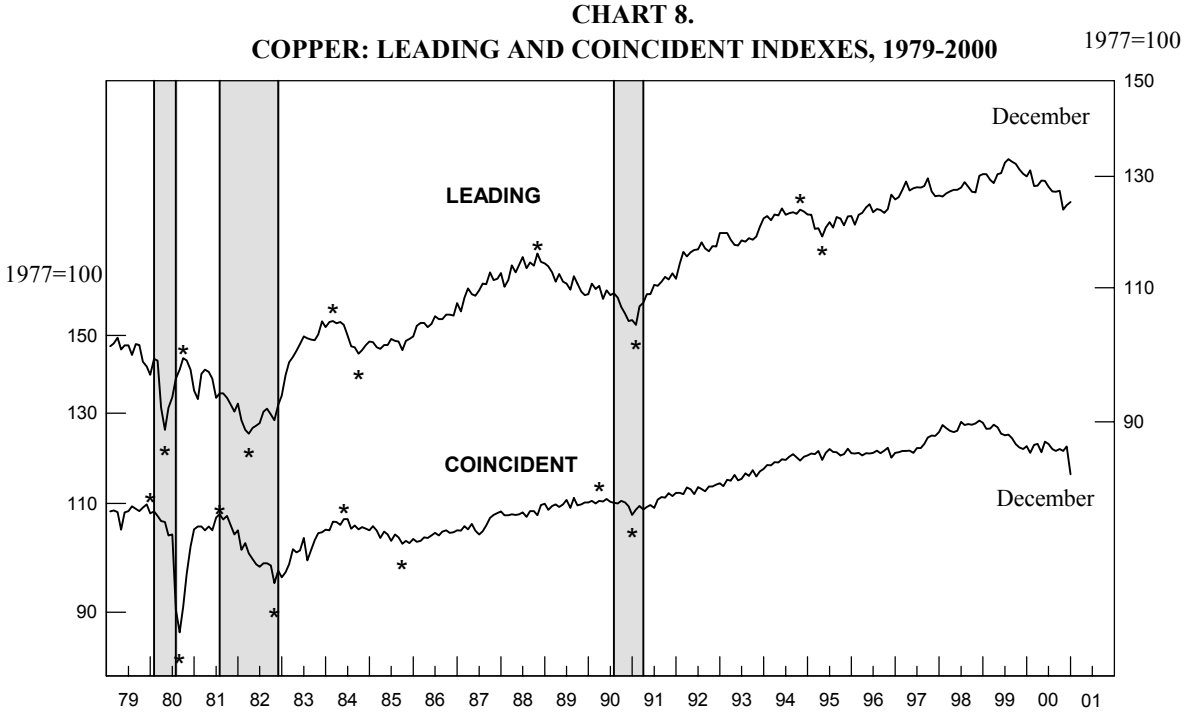
Table 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**November**	**December**
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	0.3	-0.1
2. New orders, nonferrous and other primary metals, 1982$	0.0	-0.3
3. S&P stock price index, building materials companies	0.6	1.2
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	-0.3r	0.4
5. LME spot price of primary copper	-0.1	-0.1
6. Index of new private housing units authorized by permit	0.2	-0.4
7. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.0	-0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.7r	0.4
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	0.1	-0.1
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	0.2r	-5.2
3. Copper refiners' shipments (short tons)	0.4	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.8r	-5.2

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, Census Bureau and U.S. Geological Survey; 5, London Metal Exchange; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 5, and 7 of the leading index.

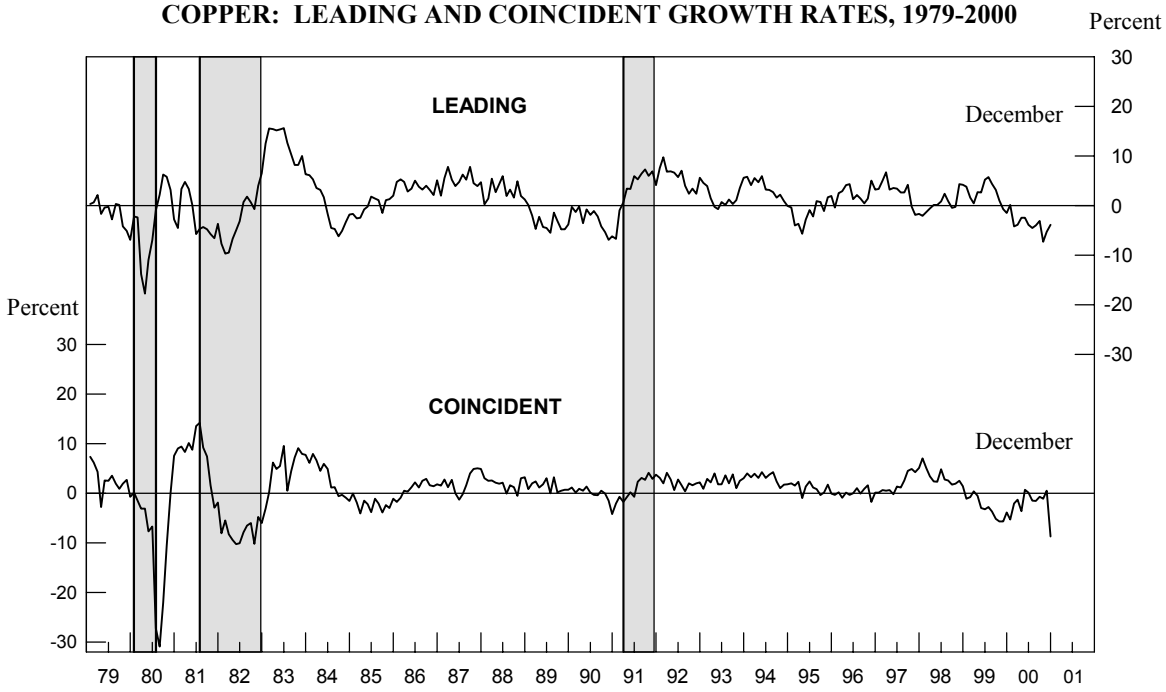
r: Revised *NA: Not available*

CHART 8.
COPPER: LEADING AND COINCIDENT INDEXES, 1979-2000



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 9.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1979-2000



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2001

Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.[1]

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Four of the metal industry coincident indexes, those for primary metals, steel, primary aluminum, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. The coincident index for copper is a blend of two different copper industries, primary smelting and refining of copper and rolling, drawing, and extruding of copper.

Of the five metal industries, primary metals is the broadest, consisting of twenty-six different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals and 8 months for steel and copper. The average lead time for the primary aluminum leading index is 6 to 8 months, and the average lead time for the aluminum mill products leading index is 6 months.

[1]**Business Cycle Indicators, A monthly report from The Conference Board** (March 1996).

The leading index of metal prices, also published in the *Metal Industry Indicators*, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 8 months in advance.

The growth rate used in the *Metal Industry Indicators* is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[\left(\frac{\text{current value}}{\text{preceding 12-month moving average}}\right)^{\frac{12}{6.5}} - 1.0\right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EST, Friday, March 23. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for *Metal Industry Indicators* on the World Wide Web is: http://minerals.usgs.gov/minerals/pubs/mii/

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